



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/722,569	11/28/2003	Tsukasa Kuboshima	2018-814	4947
23117	7590	08/11/2004	EXAMINER	
NIXON & VANDERHYE, PC 1100 N GLEBE ROAD 8TH FLOOR ARLINGTON, VA 22201-4714			TRAN, DIEM T	
			ART UNIT	PAPER NUMBER
			3748	

DATE MAILED: 08/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/722,569

Applicant(s)

KUBOSHIMA ET AL.

Examiner

Diem Tran

Art Unit

3748

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 and 5-10 is/are rejected.
- 7) ☐ Claim(s) 2-4 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 5, 6, 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Terada et al. (US Patent 6,758,037).

Regarding claims 1, 10, Terada discloses an exhaust gas cleaning system for an internal combustion engine, the exhaust gas cleaning system comprising:

a particulate filter (44) disposed in an exhaust passage of the engine for collecting and accumulating particulate matters included in exhaust gas;

an operating condition detecting means for detecting an operating condition of the engine (see col. 3, lines 34-39); particulate matter accumulation quantity detecting means for detecting a quantity of the particulate matters accumulated in the particulate filter (see col. 3, lines 40-49); temperature increasing means for increasing temperature of the particulate filter; temperature increase controlling means for operating the temperature increasing means based on detection results of the operating condition detecting means and the particulate matter accumulation quantity detecting means (see col. 4, lines 34-49); and particulate matter accumulation inhibiting means included in the temperature increase controlling means for performing an operation for inhibiting the accumulation of

Art Unit: 3748

the particulate matters to the particulate filter when the particulate matters accumulated in the particulate filter exceeds a predetermined quantity and the engine is under a predetermined operating condition (see col. 7, lines 31-40, 55-67).

Regarding claims 5, 6, Terada further discloses that the particulate matter accumulation inhibiting means reduces the quantity of the particulate matters discharged from the engine by reducing a quantity of exhaust gas recirculated into intake air of the engine (see col. 7, lines 33-40).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Terada et al. (US Patent 6,758,037).

Regarding claim 7, Terada discloses all the claimed limitations as discussed in claim 5 above, however, fails to disclose that the particulate matter accumulation inhibiting means reduces the quantity of the particulate matters discharged from the engine by decreasing an fuel injection quantity with respect to air intake quantity.

It is well known to those with ordinary skill in the art that in order to reduce a quantity of the particulate matters discharged from the engine, an fuel injection quantity is decreased with respect to air intake quantity. By allowing more air to flow into the combustion chamber, an amount of unburned fuel in the combustion chamber is reduced

and thus an amount of particulates produced during combustion is decreased. Therefore, such disclosure by Terada is notoriously well known in the art so as to be proper for official notice.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Terada et al. (US Patent 6,758,037) in view of Aoki et al. (US Patent 5,908,022).

Regarding claim 8, Terada discloses all the claimed limitations as discussed in claim 5 above, however, fails to disclose that the particulate matter accumulation inhibiting means reduces the quantity of the particulate matters discharged from the engine by increasing fuel injection pressure. Aoki teaches that it is conventional in the art, to reduce the quantity of the particulate matters discharged from the engine by increasing fuel injection pressure (see col. 5, lines 11-13, 29-32).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the teaching of Aoki in the Terada system, since the use thereof would have reduced the generation of soot from the internal combustion engine.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Terada et al. (US Patent 6,758,037) in view of Sasaki et al. (US Patent US 6,470,850).

Regarding claim 9, Terada discloses all the claimed limitations as discussed in claim 5 above, however, fails to disclose that the particulate matter accumulation

Art Unit: 3748

inhibiting means reduces the quantity of the particulate matters discharged from the engine by advancing fuel injection timing. Sasaki teaches that it is conventional in the art, to reduce the quantity of the particulate matters discharged from the engine by advancing fuel injection timing (see col. 1, lines 32-38).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have utilized the teaching of Sasaki in the Terada system, since the use thereof would have reduced the generation of soot from the internal combustion engine.

Allowable Subject Matter

Claims 2-4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication from the examiner should be directed to Examiner Diem Tran whose telephone number is (703) 308-6073. The examiner can normally be reached on Monday -Friday from 8:00 a.m.- 5:30p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion, can be reached on (703) 308-2623. The fax number for this group is (703) 872-9306.

Art Unit: 3748

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.

DT
August 4, 2004



Diem Tran
Patent Examiner
Art unit 3748



THOMAS DENION
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700